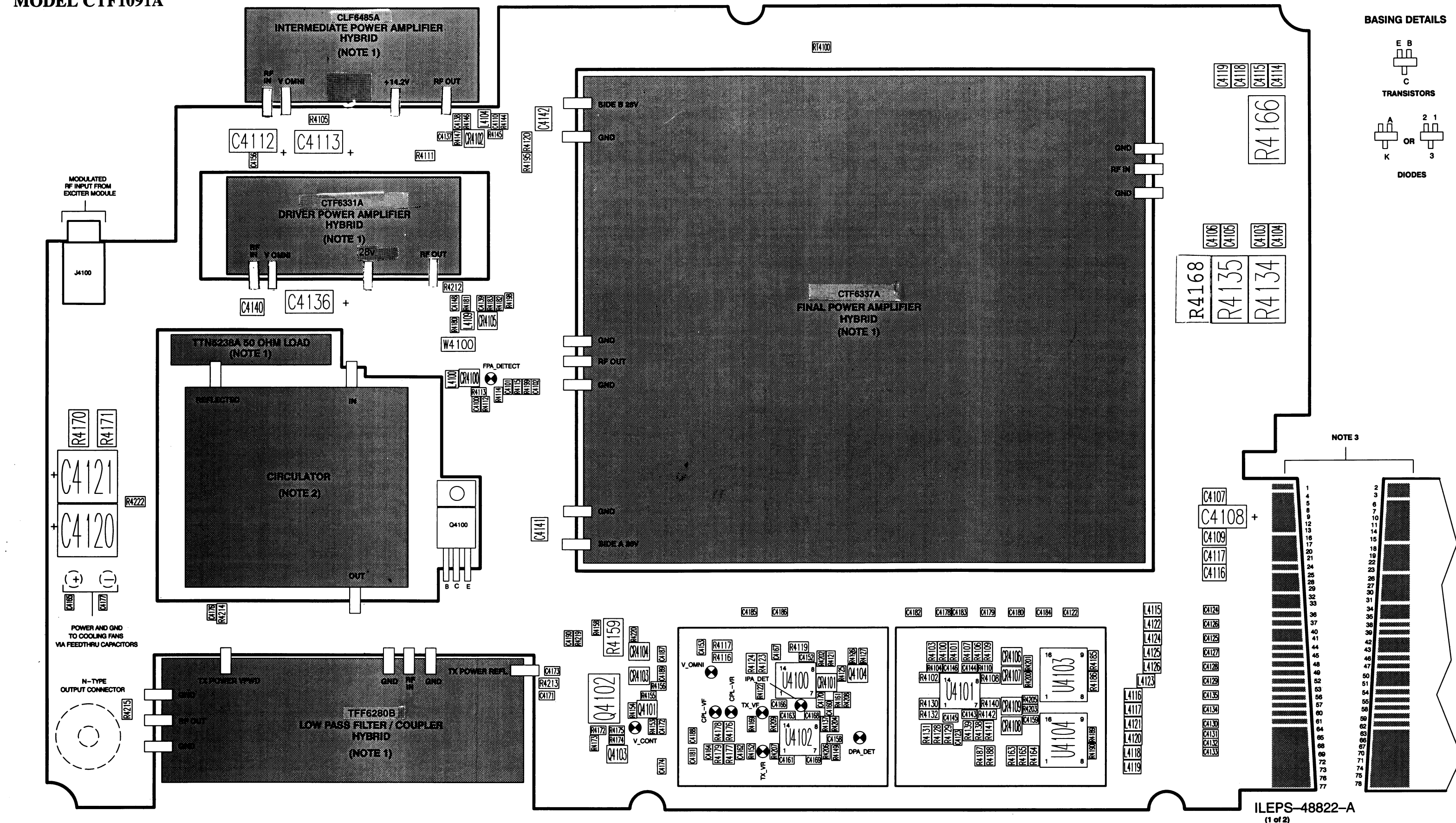


100W 800 MHz POWER AMPLIFIER MODULE

MODEL CTF1091A



SMR6651 68P81097E99-C
(Sheet 1 of 2)
12/01/03-UP

NOTES:

- 1) CLF6485A, CTF6337A, CTF6331A, and TTF6280B ARE HYBRIDS AND ARE CONSIDERED NON-REPAIRABLE. IF HYBRID IS MALFUNCTIONING, REPLACE ENTIRE HYBRID.
- 2) THE MOTOROLA PART NUMBER FOR THE CIRCULATOR IS 5884911T06.
- 3) THE CIRCUIT BOARD EDGE CONNECTOR HAS PRINTED CIRCUIT PLATED CONTACTS ON BOTH SIDES OF THE BOARD EDGE. SEE THE FOLLOWING TABLE FOR EDGE CONNECTOR PIN NUMBERING/SIGNAL NAME CROSS-REFERENCE.

PIN NUMBER	SIGNAL NAME	PIN NUMBER	SIGNAL NAME
1	GND	40	GND
2	GND	41	GND
3	GND	42	GND
4	+28V	43	GND
5	+28V	44	NOT USED
6	+28V	45	NOT USED
7	+28V	46	NOT USED
8	+28V	47	NOT USED
9	+28V	48	FAN ON
10	+28V	49	GND
11	+28V	50	GND
12	+28V	51	GND
13	+28V	52	X1 MUX (NOT USED)
14	+28V	53	Y1 MUX (NOT USED)
15	+28V	54	X2 MUX
16	+14.2V	55	Y2 MUX
17	+14.2V	56	X3 MUX
18	+14.2V	57	Y3 MUX
19	+14.2V	58	A MUX CTRL
20	+14.2V	59	B MUX CTRL
21	+14.2V	60	SPARE 1
22	+14.2V	61	SPARE 2
23	+14.2V	62	SPARE 3
24	+5V	63	GND
25	GND	64	GND
26	GND	65	GND
27	GND	66	GND
28	GND	67	GND
29	GND	68	GND
30	GND	69	GND
31	GND	70	GND
32	VCTRL	71	GND
33	VCTRL	72	GND
34	VCTRL	73	GND
35	VCTRL	74	GND
36	TX VF 1	75	GND
37	PA TEMP 1 (NOT USED)	76	GND
38	DRIVER FWD (NOT USED)	77	GND
39	TX VR 1 (NOT USED)	78	GND

ILEPS-48822-A
(2 OF 2)

parts list

CFT6344A RF/DC Distribution Board (800 MHz 100W PA)		PL--13098--A
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C4100	2113740A35	capacitor, fixed:
C4101	2113740A43	18 pF, $\pm 5\%$; 50 V
C4102	2113740G03	39 pF, $\pm 5\%$; 50 V
C4103 thru 4107	2113901C48	1 pF, ± 0.1 pF; 50 V
C4108	2311048A45	39 pF, $\pm 5\%$; 100V
C4109	2113901C29	10 uF, $\pm 10\%$; 35 V
C4110	2113740A35	10 uF, ± 0.5 pF; 100 V
C4112,4113	2311048A45	18 pF, $\pm 5\%$; 50 V
C4114 thru 4116	2113901C48	10 uF, $\pm 10\%$; 35 V
C4117	2113901C29	39 pF, $\pm 5\%$; 100V
C4118,4119	2113901C48	39 pF, $\pm 5\%$; 100V
C4120,4121	238009M237	10 pF, $\pm 20\%$; 16 V
C4122 thru 4135	2113740A43	39 pF, $\pm 5\%$; 50 V
C4136	2311048A45	10 uF, $\pm 10\%$; 35 V
C4137,4138	2113740G03	1 pF, ± 0.1 pF; 50 V
C4139	2113740A35	18 pF, $\pm 5\%$; 50 V
C4140 thru 4142	2113901C48	39 pF, $\pm 5\%$; 100V
C4143 thru 4146	2113740A43	39 pF, $\pm 5\%$; 50 V
C4148	2113740G03	1 pF, ± 0.1 pF; 50 V
C4152,4153	2113740A43	39 pF, $\pm 5\%$; 50 V
C4156	2113740G03	1 pF, ± 0.1 pF; 50 V
C4158 thru 4172	2113740A43	39 pF, $\pm 5\%$; 50 V
C4173	2113740A25	7.54 pF, ± 0.25 pF; 50V
C4174,4175	2113740A15	3.3 pF, ± 0.1 pF; 50 V
C4176	2113740A25	7.54 pF, ± 0.25 pF; 50V
C4177 thru 4189	2113740A43	39 pF, $\pm 5\%$; 50 V
C4190	2113741A57	0.03 ohm, $\pm 5\%$; 50 V
CR4100	4882290T04	diode (see note):
CR4101	4813833C02	Diode; hot carrier
CR4102	4882290T04	Dual Diode; common cathode
CR4103,4104	4813833C05	Diode; hot carrier
CR4105	4882290T04	dual 70 V
CR4106 thru 4109	4813830A14	Diode; hot carrier
		Zener, 5.1 V
		connector:
J4100	0984393T01	recaptable: uhf
		coil:
L4100	2462587X47	CHIP IND 33 NH 5%
L4104	2462587X41	10 nH, $\pm 5\%$
L4109	2462587X44	18 nH, $\pm 5\%$
L4115 thru 4128	2462587X55	150 nH, $\pm 5\%$
L4127	2460591E85	22.57 nH, $\pm 5\%$
		transistor (see note):
Q4100	4813822D07	TSTR PNP 90V 10A MJF2955
Q4101	4813824A10	NPN
Q4102	4813821A08	TSTR P-CH 80V 12A _2955_
Q4103,4104	4813824A10	NPN
		resistor, fixed:
R4100	0611077F94	10.7K, $\pm 1\%$; 1/8 W
R4101	0611077F24	2K, $\pm 1\%$; 1/8 W
R4102	0611077E94	1K, $\pm 1\%$; 1/8 W
R4103	0611077F94	10.7K, $\pm 1\%$; 1/8 W
R4104	0611079G01	10K, 1/10 W; $\pm 1\%$
R4105	0611077A01	0 ohm, $\pm 5\%$; 0 W
R4106	0611077F94	10.7K, $\pm 1\%$; 1/8 W
R4107	0611077F24	2K, $\pm 1\%$; 1/8 W
R4108	0611077E94	1K, $\pm 1\%$; 1/8 W
R4109	0611077F94	10.7K, $\pm 1\%$; 1/8 W
R4110	0611079G01	10K, 1/10 W; $\pm 1\%$
R4111	0611077A01	0 ohm, $\pm 5\%$; 0 W
R4112,4113	0611079G01	10K, 1/10 W; $\pm 1\%$
R4114	0611079A84	2700 ohms, $\pm 5\%$; 1/10 W
R4115	0611079A26	10 ohms, $\pm 5\%$; 1/10 W
R4116	0611077F88	5.78K, $\pm 1\%$; 1/8 W
R4117	0611077F24	2K, $\pm 1\%$; 1/8 W

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
R4119	0611077B15	47K, $\pm 5\%$; 1/8 W
R4120	0611077A01	0 ohm, $\pm 5\%$; 0 W
R4121	0611079A74	1K, $\pm 5\%$; 1/10 W
R4122	0611079G01	10K, 1/10 W; $\pm 1\%$
R4123	0611077F56	4.32K, $\pm 1\%$; 1/8 W
R4124	0611077F68	5.76K, $\pm 1\%$; 1/8 W
R4125,4126	0611079G01	10K, 1/10 W; $\pm 1\%$
R4127	0611079A74	1K, $\pm 5\%$; 1/10 W
R4128	0611077G04	13.3K, $\pm 1\%$; 1/8 W
R4129,4130	0611077F24	2K, $\pm 1\%$; 1/8 W
R4131	0611077G22	20.5K, $\pm 1\%$; 1/8 W
R4132	0611077G42	33.2K, $\pm 1\%$; 1/8 W
R4134,4135	0682089V02	SMT RES. 02 OHM 5% 2W
R4137	0611079A74	1K, $\pm 5\%$; 1/10 W
R4138	0611077G04	13.3K, $\pm 1\%$; 1/8 W
R4139,4140	0611077F24	2K, $\pm 1\%$; 1/8 W
R4141	0611077G22	20.5K, $\pm 1\%$; 1/8 W
R4142	0611077G42	33.2K, $\pm 1\%$; 1/8 W
R4144,4145	0611079G01	10K, 1/10 W; $\pm 1\%$
R4146	0611079A56	58 ohms, $\pm 5\%$; 1/10 W
R4147	0611079A44	150 ohms, $\pm 5\%$; 1/10 W
R4149	0611079A74	1K, $\pm 5\%$; 1/10 W
R4152	0611079A74	1K, $\pm 5\%$; 1/10 W
R4153	0611079A60	270 ohms, $\pm 5\%$; 1/10 W
R4154 thru 4156	0611079A74	1K, $\pm 5\%$; 1/10 W
R4158	0611079G01	10K, 1/10 W; $\pm 1\%$
R4159	0683962T24	1 ohm, $\pm 5\%$; 1 W
R4161	0611079A74	1K, $\pm 5\%$; 1/10 W
R4163	0611077A01	0 ohm, $\pm 5\%$; 0 W
R4164	0611077F12	1.5K, $\pm 1\%$; 1/8 W
R4165	0611077G09	15K, $\pm 1\%$; 1/8 W
R4166	0682089V02	SMT RES. 02 OHM 5% 2W
R4168	0682089V02	SMT RES. 02 OHM 5% 2W
R4169	0611079A74	1K, $\pm 5\%$; 1/10 W
R4170,4171	0683962T24	9.1 ohms, $\pm 5\%$; 1 W
R4172	0611079G01	10K, 1/10 W; $\pm 1\%$
R4173,4174	0611079A74	1K, $\pm 5\%$; 1/10 W
R4175	0611079G01	10K, 1/10 W; $\pm 1\%$
R4176	0611077B14	43K, $\pm 5\%$; 1/8 W
R4177	0611077B10	30K, $\pm 5\%$; 1/8 W
R4178	0611077B14	43K, $\pm 5\%$; 1/8 W
R4179	0611077B10	30K, $\pm 5\%$; 1/8 W
R4180	0611079A50	100 ohms, $\pm 5\%$; 1/10 W
R4181	0611079A26	10 ohms, $\pm 5\%$; 1/10 W
R4182,4183	0611079G01	10K, 1/10 W; $\pm 1\%$
R4185	0611077G04	13.3K, $\pm 1\%$; 1/8 W
R4186	0611077F24	2K, $\pm 1\%$; 1/8 W
R4187	0611077F68	5.76K, $\pm 1\%$; 1/8 W
R4188	0611077F24	2K, $\pm 1\%$; 1/8 W
R4189,4190	0611079G01	10K, 1/10 W; $\pm 1\%$
R4195	0611077A01	0 ohm, $\pm 5\%$; 0 W
R4198 thru 4209	0611079A50	100 ohms, $\pm 5\%$; 1/10 W
R4212	0611077A01	0 ohm, $\pm 5\%$; 0 W
R4213,4214	0611077F64	1K, $\pm 1\%$; 1/8 W
R4215	0611077A01	0 ohm, $\pm 5\%$; 0 W
R4217	0611079A01	0 ohms, $\pm 5\%$; 1/10 W
R4219	0611079E01	100K, $\pm 5\%$; 1/10 W
R4220	0611079A01	0 ohms, $\pm 5\%$; 1/10 W
R4222	0611077A01	0 ohm, $\pm 5\%$; 0 W
		thermistor:
RT4100	0680149M02	100K, $\pm 10\%$; 240 MW
		Integrated circuit (see note):
U4100 thru 4102	5113819A05	High Performance, Single Supply
U4103,4104	5113805A84	Mux/Demux, Dual 4-Channel Analog
		cable assembly:
		cable assembly:
W4100	4280500F01	SMT ZERO OHM MELF

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		non-referenced items:
	1584753T02	Housing (used with E4100)
	1584753T02	Housing (used with E4101)
	1585034J03	COVER, Shield (used with E4100)
	1585034J03	COVER, Shield (used with E4101)
	5482006W01	LABEL, PCB barcode
	5482006W02	RIBBON, thermal XFER
	5484960T01	LABEL, barcode: 6.3 x 12.7MM, white
	8482219W07	CIRCUIT BOARD

note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.

CLF6508A 800/900 MHz 100W PA Hardware		PL-13084-A
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		non-referenced items:
	0185181U01	ASSEM PA COOLING FANS
	0121956A02	NUT HEX 3/8 x 24 x 1/2 x 3/32
	0310907A29	Screw, Tapping: m3.5 x 0.8 x 10 (7 used)
	0310943A09	Screw, Tapping: TT3 x 5 x 6 (16 used)
	0310943U01	Screw, Tapping: TT3 x 5 x 8 (13 used)
	0310943J15	Screw, Tapping: (2 used)
	0312016A32	SCRTPG TT3.5X.6X.18 STRPNSTLZNC (8 used)
	0400007991	WASHER, Steel, 3/8", Int. tooth (2 used)
	0800216159	CONNECTOR, neopaste: coaxial
	1586002U02	COVER High Band PA
	2182806H05	1000 OF. ±0%; 200V (2 used)
	25823179W06	HEATSHINK HB PA
	3282789H05	Gasket, RFl: .094" x .094" (35.8 used)
	548224Y01	Label, PCB barcode
	5482006W02	RIBBON, thermal XFER (0.00002 used)

CTF6331A Driver PA Hybrid PL-13102-C

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.

TFF6280B Low Pass Filter/Coupler Hybrid		PL-13101-
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION

This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.

CLF6485A Intermediate PA Hybrid PL-13100-

This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.

TTN5238A Circulator 50Ω Load		PL-13103-
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION

1414000	100-1700T00	cable assembly: CTRAB DA
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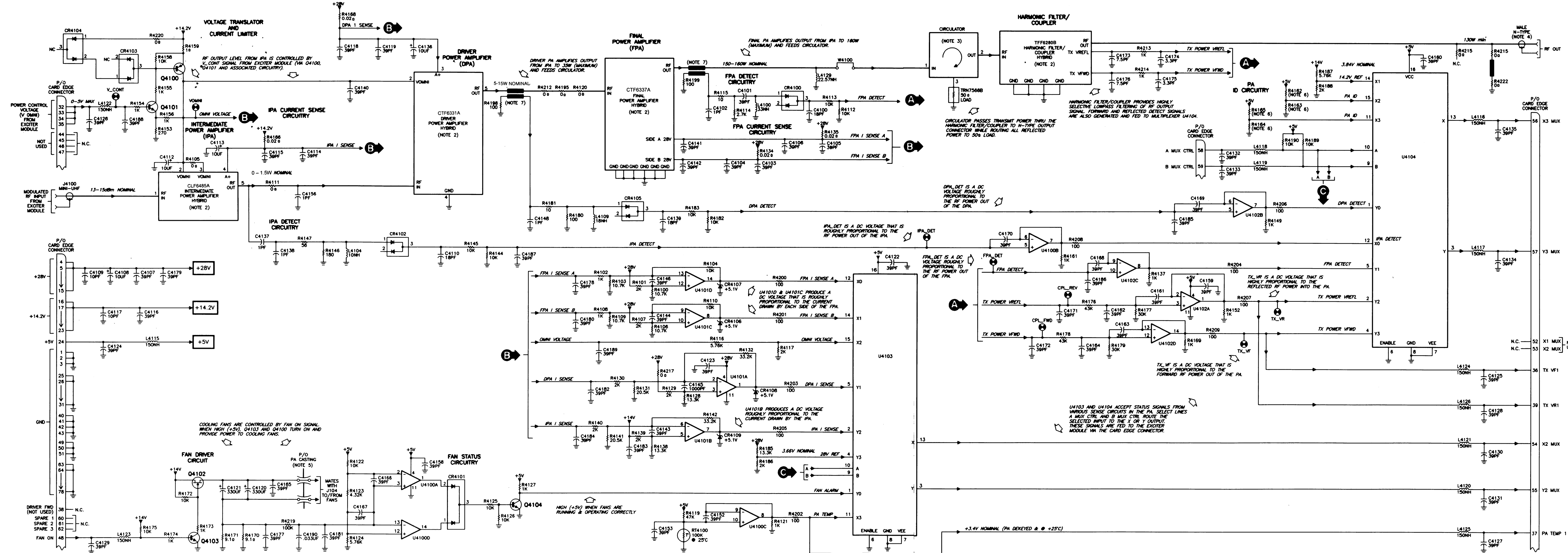
4385035U02	non-referenced items: FLANGE, circulator load (VHF)
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This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.

CTF6337A Final PA Hybrid		PL-13099-
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION

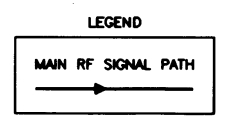
This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.

100W 800 MHz POWER AMPLIFIER MODULE
MODEL CTF1091A



- NOTES:
- UNLESS OTHERWISE INDICATED, ALL RESISTOR VALUES ARE IN OHMS. CAPACITOR VALUES ARE IN PICOFARADS AND INDUCTOR VALUES ARE IN MILLIHENRIES. N.C. - NO CONNECTION.
 - CLF6485A IPA, CTF6337A FPA, CTF6331A DPA, and TFF6280B LOW-PASS FILTER/COUPLER ARE HYBRIDS AND ARE CONSIDERED NON-REPAIRABLE. REPAIR IS BY REPLACEMENT OF ENTIRE HYBRID.
 - THE MOTOROLA PART NUMBER FOR THE CIRCULATOR IS 588491108.
 - THE N-TYPE OUTPUT CONNECTOR (0900816159, P/O TRN7808A HARDWARE) IS SOLDERED ONTO THE REVERSE SIDE OF THE RF/DC DISTRIBUTION BOARD.
 - CONNECTIONS TO THE COOLING FANS ARE MADE VIA FEEDTHRU CAPACITORS (1000PF, P/O TRN7808A HARDWARE).
 - RESISTORS R4162 THRU R4165 COMPRISE A "RESISTOR ROW" WHICH IDENTIFIES THE BAND, RANGE AND OUTPUT POWER OF THE PARTICULAR PA MODULE. THE RESISTORS ARE PLACED AS SHOWN IN THE TABLE BELOW.
 - FPA/DPA DETECT CIRCUITRY ACCEPT SAMPLES OF FPA/DPA OUTPUTS VIA MICROSTRIP COUPLERS.

INTEGRATED CIRCUIT POWER AND GROUND CONNECTIONS				
REF DESIG	TYPE	DESCRIPTION	SUPPLY PIN	GROUND PIN
U4100	MC33074	HIGH PERFORMANCE OPERATIONAL AMPLIFIER	4	11
U4101	MC33074	HIGH PERFORMANCE OPERATIONAL AMPLIFIER	4	11
U4102	MC33074	HIGH PERFORMANCE OPERATIONAL AMPLIFIER	4	11
U4103	74HC4052	ANALOG MULTIPLEXER/DEMULTIPLEXER	16	8
U4104	74HC4052	ANALOG MULTIPLEXER/DEMULTIPLEXER	16	8



FLEPS-48821-A